

character "A8" with --8A- consistent with the red marked copy previously submitted.

In the Claims

The Sec. 112 Rejections

Claims 1 and 2 have again been rejected under Sec. 112, first and second paragraphs as failing to comply with the enablement and written description requirements. Re-consideration of these grounds of rejection is respectfully requested. In answer to the Examiner's inquiry about how and when the rocker lever moves along the fixed bolt, those skilled in the art will fully understand that the rocker lever 8 automatically moves along the fixed bolt whenever necessary (and need not be manually moved) and how and when such automatic movement takes place. This is demonstrated by the fact that various patent Examiners in other jurisdictions have readily understood this disclosure as evidenced by the attached copy of an English translation of the PCT International Report on Patentability and the fact that, following substantive examination by the European Patent Office, a European Patent (1 618 314 B!) has been granted. Also, the Chinese Patent Office has recently agreed to grant a patent after having reviewed the specification, claims and drawings.

The Examiner's attention is particularly drawn to the following passages in the specification which enable those skilled in the art to make and use the invention and reasonably convey to those skilled in the art that the inventors had possession of the invention at the time the application was filed:

- 1) The last paragraph on page 2, in particular the last sentence thereof;
- 2) The last paragraph on page 3, in particular the last sentence thereof;
- 3) The first paragraph on page 4, in particular the end of the first sentence thereof;
- 4) The second paragraph on page 4, in particular the first sentence thereof; and
- 5) Claims 1 and 2.

The brake of the present invention is ordinarily used to supplement a main elevator brake to hold or clamp the brake disc whenever the passenger car is stationary during which time load changes take place as passengers enter and leave the car. This frequently causes the brake disc to shift axially or tilt slightly about an axis transverse to its axis of rotation, causing the brake disc to contact or rub against one or the other of the friction pads on the brake caliper or armature disc 4 after the brake is released causing noise and undue wear on the friction pad. To better understand this, the Examiner is invited to assume that, as shown in Fig. 1, the brake is engaged holding the passenger car in position and the brake disc axially moves or slightly tilts to the right due to load changes in the passenger car. This causes the rocker lever 8 to slide to the right on the bolt 7 so that when the brake is released (Fig. 2) the rocker lever 8 then automatically pivots about a new fulcrum (to the right of the original fulcrum) to position each friction pad with substantially equal air gap or clearance from the now rotating brake disc 3. Subsequent movement or tilting of the brake disc caused by a load change while the brake is actuated again causes moves rocker lever 8 on the bolt 7 to compensate for the axial movement of the brake disc. This re-

positioning of the rocker lever 8 on the fixed bolt 7 takes place automatically whenever the brake disc 3 tilts or moves axially on its axis of rotation. Moreover, this “self centering” or “re-positioning” of the caliper 2 by use of a frictionally moveable rocker lever is not shown anywhere in the prior art as will be explained below. In practice the air gaps on either side of the brake disc may be as small as 0.2 mm (0.008 inch). Typically, the rocker lever 8 travels a maximum of only about 0.5 mm (0.02 inch) on the bolt 7.

Finally, the Sec. 112 indefiniteness rejections of claims 1 and 2 are believed to be fully overcome by the present amendments of claims 1 and 2. Claim 1 now includes minor amendments of an editorial nature and more substantive amendments discussed below to better distinguish the invention from the prior art. Claim 2 no longer refers to a bracket.

The Sec. 103 Rejections

It is respectfully submitted that the Examiner’s rationale for combining prior art references is incomplete and in error. Although Hikari discloses a caliper brake and Kawai discloses a dual arm lever, the Examiner’s position that it would have been obvious to a person of ordinary skill in the art to modify the caliper brake as taught by Hikari with the dual-arm rocker lever as taught by Kawai is simply an unsupported and incorrect conclusion reached by using the present invention as a template through a hindsight reconstruction of applicant’s claims. Such a combination of features from Hikari and Kawai does not result in the claimed combination because:

1) Kawai's crank lever 268 is not frictionally supported on a fixed bolt for pivotal motion about a fulcrum transverse to the fixed bolt, such as the fixed bolt 7 of the present invention. Instead, Kawai's lever 268 is supported on a camshaft 272, which, in turn, is rotatably supported by a support member 270 integral with housing 280 of the brake. This is very different from fixed bolt 7 of the present invention, which extends parallel to the direction of any displacement of the caliper brake which, in turn floats on the bolt 7.

Kawai's crank lever 268 needs to be operated by external energy, namely by energy supplied by the solenoid 262 on the one hand and his tension spring 282 on the other hand. Both the solenoid 262 and the spring 282 are connected to the housing 280 of the brake. This is very different from the rocker-lever 8 in the present invention. The rocker-lever is frictionally mounted on and pivots about a fulcrum transverse to bolt 7 and the two far ends of the rocker-lever 8 are affixed to the floating caliper 2 and to the armature disc 4 at 10 and 11 in Figs. 1-3. Any noticeable more or less accidental axial displacement of brake disc 3 (during the clamped condition thereof while loading or unloading the passenger car) will produce a corresponding frictional displacement of the fulcrum of the rocker lever 8 on the bolt 7. Accordingly, during the next disengaged condition of the caliper brake of this invention (see Fig. 2 of the drawings) the disc brake 3 will once again be perfectly centered, even though the disc brake may have moved slightly in an axial direction to one or the other side. As a result, the inventive caliper brake does not employ any outside energy to operate the centering action of the friction linings 5 and 6 relative

to the brake disc 3 and therefore essentially eliminates undesired grinding noises.

If the teachings of Hikari and Kawai were somehow combined, the resulting product would be very different from the claimed invention. The support member 270 of camshaft 272, the solenoid 262 and the spring 282 of Kawai would have to be positioned near the caliper 12 of the Hikari reference and would have to be supported by the caliper so that cam 272a of Kawai could be positioned between the two brake pad positions 21 of Hikari. Needless to say, such an arrangement would be totally different from the present invention in which the rocker lever 8 is frictionally mounted on the fixed bolt 7 on which the caliper floats in addition thereto. The corresponding bolt(s) in Hikari is/are floating pins 17 as explained in the paragraph bridging columns 2 and 3.

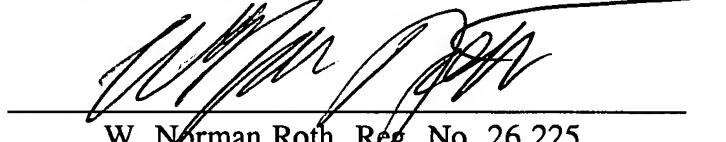
To summarize, there are no known methods of making such a combination since the crank lever 268 of Kawai rotates about a fixed axis (272) which is perpendicular to the axis of rotation of his brake disc so that the lever 268 cannot linearly move along a straight line parallel to the axis of rotation of the brake disc as in the present invention. Kawai's teaching of pivotal motion of his lever 268 rather than linear motion in a direction parallel to the axis of rotation of the brake disc ("moveable in the direction of the length of said fixed bolt" in the language of claim 1) therefore teaches away from the present invention. Moreover, and the present invention does not involve simple substitution of one known element for another to yield predictable results. The present amendments of claim 1 are believed to better emphasize the non-obvious features of

the invention.

Specifically, the prior art does not teach, suggest or otherwise indicate to one skilled in the art to provide a dual arm rocker lever which is frictionally mounted on a bolt or frictionally mounted on a bracket attached to a fixed bolt such that, while the brake is engaged, axial movement of the brake disc axially moves said rocker lever on said bolt, as the brake disengages, the rocker lever converts movement of the armature disc to an oppositely directed movement of the caliper (2) so as to provide an essentially equal air gap on either side of the brake disc.

It is believed that the claims now more particularly and distinctly point define a novel and unobvious combination entitled to patent protection. Favorable reconsideration is respectfully requested.

Respectfully submitted,



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stehenden Bolzen (7) definieren.

Claims

1. Caliper brake for a brake disc (3) particularly in elevator drives, comprising a brake body (1) mounted to float on a fixed bolt (7), a caliper (2) straddling brake disc (3) on the periphery thereof, and a solenoid (14) integrated in brake body (1) to magnetically attract a spring-biased armature disc (4) against brake body (1), said armature disc (4) and the axially opposite portion of caliper (2) having friction linings (5, 6) thereon to engage the two faces of brake disc (4), **characterized in that** a dual-arm rocker lever (8) is pivotally mounted on said fixed bolt (7) or on a bracket (17) connected thereto or on any component equivalent thereto, the rocker lever including two tongues (15A, 15B) provided at opposite ends thereof and having the one tongue (15A) connected to the peripheral surface of armature disc (4) and the other tongue (15B) connected to the caliper, said connections being such that, as the brake disengages, rocker lever or bracket (8) converts the path of armature disc (4) to an oppositely directed movement of caliper (2) so as to provide an air gap (s/2) on either side of brake disc (3). 5 10 15 20 25
2. Caliper brake as in claim 1, **characterized in that** said rocker lever or bracket (8) comprises two mutually parallel sections (8A, 8B) tangential to both sides of fixed bolt (7), said sections clinging to bolt (7) through adhesive friction exerted by friction linings (9) to so define a movable fulcrum (13) on fixed bolt (7). 30 35

Revendications

1. Frein à mâchoires pour un disque de frein (3), en particulier pour des entraînements d'ascenseurs, comprenant un corps de frein (1) monté flottant sur un axe fixe (7) et un étrier de frein (2) recouvrant le disque de frein (3) à partir du pourtour de ce dernier, ainsi qu'une bobine magnétique (14), intégrée dans le corps de frein (1), pour l'attraction électromagnétique d'un disque d'induit (4) sous pression de ressort contre le corps de frein (1), le disque d'induit (4) et la partie en vis-à-vis axial de l'étrier de frein (2) étant équipés de garnitures de friction (5, 6) pour la prise sur les deux côtés frontaux du disque de frein (3), **caractérisé en ce qu'un levier pivotant à deux bras ou étrier (8) est monté pivotant sur l'axe fixe (7) ou un étrier (17) en liaison avec ce dernier ou un composant analogue, avec deux lames (15A, 15B) montées sur des extrémités opposées du levier, une lame (15A) étant assemblée avec la surface périphérique du disque d'induit (4) et l'autre lame (15B)** 40 45 50 55

avec l'étrier de frein, à savoir de telle sorte que le levier pivotant ou étrier (8) change la direction de la course du disque d'induit (4), lors du desserrage du frein, en un mouvement de l'étrier de frein (2) dans la direction opposée, pour obtenir un entrefer (s/2) sur les deux côtés du disque de frein (3).

2. Frein à mâchoires suivant la revendication 1, caractérisé en ce que le levier pivotant ou étrier (8) comporte deux sections parallèles entre elles (8A, 8B) en tangente de part et d'autre de l'axe fixe (7), les sections se bridant par frottement statique sur l'axe (7) par l'intermédiaire des garnitures de friction (9), et définissant ainsi le point d'appui mobile (13) sur l'axe fixe (7).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference M 5306 HO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/EP2004/007243	International filing date (day/month/year) 02 July 2004 (02.07.2004)	Priority date (day/month/year) 04 July 2003 (04.07.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant CHR. MAYR GMBH + CO. KG			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
2. This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input checked="" type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

Date of issuance of this report
29 May 2006 (29.05.2006)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Authorized officer Agnes Wittmann-Regis Telephone No. +41 22 338 89 70
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

Translation

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference M 5306 HO		Date of mailing (day/month/year)
International application No. PCT/EP2004/007243		FOR FURTHER ACTION See paragraph 2 below
International filing date (day/month/year) 02.07.2004		Priority date (day/month/year) 04.07.2003
International Patent Classification (IPC) or both national classification and IPC		
Applicant CHR. MAYR GMBH + CO. KG		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/007243

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material
 in written format
 in computer readable form
 - c. time of filing/furnishing
 contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/007243

Box No. II Priority

1. The following document has not yet been furnished:

copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2004/007243

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<p>1. Statement</p> <table> <tr> <td>Novelty (N)</td> <td>Claims</td> <td>1, 2</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td>1, 2</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td>1, 2</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> </table>			Novelty (N)	Claims	1, 2	YES		Claims		NO	Inventive step (IS)	Claims	1, 2	YES		Claims		NO	Industrial applicability (IA)	Claims	1, 2	YES		Claims		NO
Novelty (N)	Claims	1, 2	YES																							
	Claims		NO																							
Inventive step (IS)	Claims	1, 2	YES																							
	Claims		NO																							
Industrial applicability (IA)	Claims	1, 2	YES																							
	Claims		NO																							
<p>2. Citations and explanations:</p> <p>1 In the present opinion, reference is made to the following document:</p> <p>D1: EP 0 935 082 A (SANYO) 11 August 1999 (1999-08-11)</p> <p>2 D1 is considered the closest prior art. It discloses (the references between parentheses relate to said document)</p> <p>a clasp brake for a brake disk (9), having a brake body (3), which is mounted in a floating manner on a stationary bolt (4), and a brake caliper (U) which engages over the brake disk from the periphery of said brake disk, and having a magnet coil (1) integrated into the brake body for electromagnetically attracting a spring-loaded armature disk (5) towards the brake body, the armature disk and the axially facing part of the brake caliper being equipped with friction linings (6, 7) for engaging on both face surfaces of the brake disk.</p>																										

WRITTEN OPINION OF THE
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International application No.

PCT/EP2004/007243

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

from which the subject matter of independent claim 1 differs by means of its characterizing part, specifically in that:

a twin-armed rocker arm/bar is pivotably mounted on the stationary bolt or bar or similar component, of which twin-armed rocker arm/bar one tongue is connected to the peripheral face of the armature disk and the other tongue is connected to the brake caliper, specifically in such a way that when the brake is ventilated, the rocker arm/bar simultaneously diverts the travel of the armature disk into a movement of the brake caliper in the opposite direction in order to obtain an air gap at both sides of the brake disk.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

3 With the rocker arm arrangement according to the characterizing part of claim 1, an even air gap is generated at both sides of the disk when the brake is ventilated, and this can therefore be considered the problem which is addressed by the present invention.

The solution proposed in claim 1 of the present application for said problem involves an inventive step (PCT Article 33(3)) since an arrangement of

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

said type is neither known from nor suggested by
the prior art.

- 4 Claim 2 is dependent on claim 1; the subject matter of claim 2 is therefore likewise novel and based on an inventive step.

- 5 The subject matter of the present application can be produced and can be used and is therefore industrially applicable under PCT Article 33(4).

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INTERNATIONAL SEARCHING AUTHORITY

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PCT/EP2004/007243

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1 Claim 1 is unclear at two points:

Line 11: "...mounted on the stationary bolt or bar or similar component..."

Line 12: "a twin-armed rocker arm/bar... of which twin-armed rocker arm/bar one tongue... and the other tongue..."

A bar or similar component and tongues are not mentioned previously in the claim.

2 For the composition of this opinion, claim 1 is interpreted (corresponding to the description and the figures) as follows:

Line 11: "...mounted on the stationary bolt or bar, which is connected to said stationary bolt, or similar component..."

Line 12: "a twin-armed rocker arm/bar having two tongues attached to opposite ends of the arm... one tongue being... and the other tongue being..."